TITLE OF THE ABSTRACT : Respiratory morbidity in children with Esophageal atresia/Tracheo Esophageal fistulae who underwent primary repair in a Tertiary care centre in South India

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Introduction: Esophageal Atresia is the most common anomaly of esophagus with an incidence of 1 in 2500-3500 live births. With advancements in surgical techniques and supportive care, current survival rate is over 90%. Long term pulmonary morbidity in these children is an underestimated, serious problem.

Objectives:

Among survivors of TEF repair surgery,

Primary:

1. To estimate the prevalence of respiratory morbidity in infancy in children who underwent corrective surgery for OA/TEF by clinical history and information from hospital records.
2. To assess the prevalence and extent of current respiratory morbidity by history, clinical examination and Objective assessment of pulmonary status using appropriate radiological imaging (CXR +/_ HRCT chest).

Secondary:

1. To assess the prevalence of oro-digestive co-morbidities which can impact respiratory health by clinical assessment and radiological imaging (barium swallow).

2. To correlate peri-operative and patient characteristics with selected respiratory outcomes in these children.

Inclusion criteria:

- Any child who was diagnosed with EA/TEF who underwent primary repair in the neonatal period between January 2008-December 2015 (for all 3 parts)
- Children who were survivors beyond 6 months of age (for part 2 & 3)
- Those who were consenting for clinical examination and diagnostic evaluation (part 3).

Exclusion criteria:

- Cases operated here beyond neonatal period.
- Children who died within the post operative period (for part 2&3).

Materials & Methods: This cross sectional observational study was done in CMC hospital, Vellore during the period November 2016 to May 2017. Out of the fifty infants who were operated during the period 2008 – 2015, 27 children could be contacted and 26 were recruited to the study after obtaining the written consent. They underwent detailed clinical assessment, ENT evaluation, CXR and barium swallow study. HRCT was done when clinically indicated.

Results: Mean age was 65.4 months. Type C fistula was the predominant (90%) type. In this cohort 30% were born preterm, mean birth weight was 2289 grams. 74% had cardiac anomalies.

Respiratory morbidity in infancy: Recurrent lower respiratory tract infections were documented in 96.3% in the first year of life. Recurrent wheeze, stridor and persistent cough were the main symptoms in 81.5%, 48.1% and 85.2%

respectively. In, subsequent years the frequency of these symptoms decreased by 15-20%.

Current Respiratory status: While only 20% reported any respiratory symptoms during the current year, 34.6% had clubbing and 62% had abnormal auscultation findings. BMI was $<5^{th}$ centile in 57.7%. GE reflux was demonstrated on barium swallow in 42.3%.Three children had unilateral vocal cord palsy and 9(34.6%) had bronchiectasis.

Univariate analysis showed a trend towards positive correlation between diagnosis of bronchiectasis and factors like recurrent LRTI in first year, history of regurgitation / vomiting and the presence of a tracheal diverticulum on CT.

Conclusion: There is a high prevalence of respiratory morbidity in survivors of TE fistula surgery. Results of this study highlight the need for a strategy to ensure regular follow up and early identification of respiratory complications.